

FOREST INSECT CONDITIONS
BOISE ZONE
1975

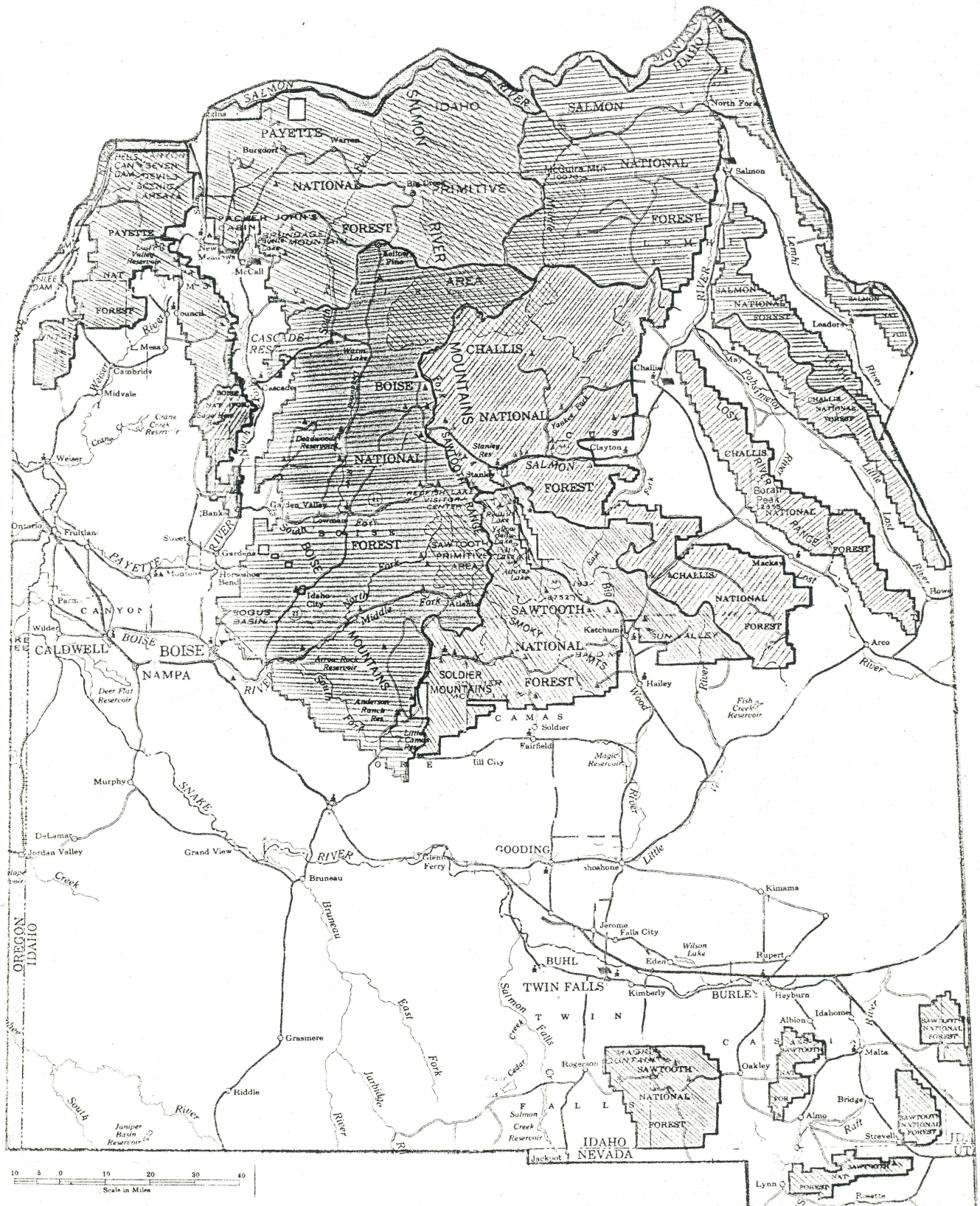
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By

Arland C. Valcarce

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INTRODUCTION

Administration of insect and disease management responsibility within the Boise Zone is accomplished through the Forest Supervisors on the Boise, Payette, Sawtooth, Salmon and Challis National Forests. In addition, cooperation is maintained with other federal, state and private landowners throughout southwestern Idaho. Commercial forest covers more than 4,959,500 acres of pure and mixed stands of Douglas fir, ponderosa pine, lodgepole pine, Engelmann spruce, grand fir, subalpine fir, western larch and aspen within the Zone. Non-commercial forest includes more than 1,500,000 intervening acres. Commercial timber harvest within the Zone constitutes more than 60 percent of the total for Region 4.

Much of this report is based upon results of the annual aerial detection survey of each forest within the Zone.

During 1975 bark beetles caused most of the tree mortality in the Boise Zone. Mountain pine beetle and Douglas fir beetle infestations continued to cause considerable natural rotation of old growth lodgepole pine and Douglas fir over many thousands of acres. Mountain pine beetle continued to thin young and intermediate age, overstocked ponderosa pine stands mainly on private lands on the McCall and Cascade Districts, Payette and Boise National Forests. In lodgepole pine, mountain pine beetle showed an increasing trend on the Sawtooth, Payette and Boise National Forests. Douglas fir beetle infestations increased on the Sawtooth, Boise and Salmon National Forests. High incidence of tree killing occurred in the Idaho Primitive Area on the Payette National Forest; elsewhere on the Forest tree mortality remained low. The Challis National Forest showed a low incidence of Douglas fir beetle caused tree mortality although it was an increase compared to 1974.

Spruce budworm was the major defoliator again in 1975 and caused widespread top killing, mortality in reproduction, and undetermined growth loss on the Payette and Boise National Forests and intervening private lands. The Salmon National Forest showed light to moderate defoliation. Ips engraver beetles increased in most areas of ponderosa pine on the Boise National Forest. The Cascade District however showed a marked decrease of these insects in 1975. Western pine beetle took an upswing on the Emmett District, Boise National Forest; an outbreak occurred which covered about four square miles. Logging is currently underway to minimize damage to residual stands. No visible defoliation by the Douglas fir tussock moth was detected during the annual aerial survey. Yard trees on a farm near Rupert, Idaho sustained top damage from a localized infestation that has

persisted for several years. Douglas fir impact plots were established to determine the short and long range impact of tussock moth feeding that occurred in 1973. This short-lived outbreak caused severe damage in one year's time on Forest Service, state, private and other federal lands. Since 1973 no new defoliation has been observed in forested areas of the Boise Zone. Conspicuous flights of pine butterfly were observed on the Boise and Idaho City Districts, Boise National Forest. However, no visible defoliation was detected during the annual aerial survey. Fir engraver beetle continued to kill large subalpine fir in disturbed summer home sites around Cascade Reservoir, Boise and Payette National Forests. Fir engraver beetle also caused widely scattered mortality of single- and multiple-tree groups in a recently completed sale area on New Meadows District, Payette National Forest.

Sugar pine tortrix damaged branch tips and leaders of young lodgepole pine in a thinned stand near Donnelly, Idaho.

MOUNTAIN PINE BEETLE, Dendroctonus ponderosae Hopk.

Many active mountain pine beetle infestations occurred on the Cassia Division, Sawtooth National Forest. Losses were estimated to be over 120,000 trees in 1975. Timber crews measured a gross volume of 389 MMBF of merchantable lodgepole pine sawtimber on 22,000 acres. The Boise Insect and Disease Control Group was to determine the current and future status of the infestation. A large sale is proposed for the area if economically feasible. Survey results showed 114 MMBF in standing dead trees and 275 MMBF in live trees. The sawtimber is scattered over hundreds of individual stands widely separated by grass-sagebrush and aspen type that occur at relatively high elevation. This has produced a natural check on the rate of beetle increase. Annual losses from beetles appear to occur at a constant rather than an accelerated annual rate. However, exceptions occur within individual stands.

Industry has shown interest in logging 10 MMBF annually for the next 10 years. Even though the current annual beetle loss is about 21 MMBF a sales program of this magnitude was shown to be feasible entomologically. Considerable beetle suppression could be attained by logging stands which contain the largest diameter trees first. One company has purchased a 55-acre site near Hollister, Idaho for the purpose of building a mill. Much of the old growth lodgepole pine is heavily infected with mistletoe and spike tops are numerous. The proposed sale would remove at least half of the old growth and allow natural regeneration.

On the northern division of the Sawtooth, mountain pine beetle remained epidemic and increased along Warm Springs Creek and Big Wood River drainages west and north of Ketchum. An estimated 13,000 trees were

killed in 1975 in these areas. Mountain pine beetle infestations continued to cause heavy tree mortality in both lodgepole and ponderosa pine stands from McCall to Round Valley on the Payette and Boise National Forests. The 1975 mortality was estimated at 22,000 trees. Infestations began about 1960 and expanded as areas became depleted of trees. Over half of the infestations are on private lands and little has been done by the landowners to alleviate continuing tree losses. Increased mountain pine beetle activity was noted from the aerial survey in and around the town of McCall where more than 12,000 trees were estimated killed in 1975.

Infestations in lodgepole pine now occur along most of the Clear Creek drainage, Cascade District, Boise National Forest, and in the Cuddy Mountains, Council District, Payette National Forest. About 10,000 trees were killed in scattered groups in both areas. Aggressive infestations of mountain pine beetle in lodgepole pine were detected: (1) along a six-mile strip of the upper South Fork of the Boise River, (2) along the West Fork of Big Smoky Creek on the Sawtooth National Forest, (3) along Squaw Creek drainage on upper Yankee Fork, (4) Little Boulder Creek drainage on the East Fork of the Salmon River, (5) Warm Springs Creek, (6) Stanley Creek, (7) upper Loon Creek drainage, and (8) near Sheepeater Hot Springs on the Challis National Forest. An area of limber pine was killed by mountain pine beetle near Brundage Mountain; numerous scattered red top groups in lodgepole pine were noted from Payette Lakes ski area to Brundage Mountain; and an infestation numbering about 2,000 faders was mapped in the Paddy Flat area on the Payette National Forest. Aggressive infestations killed groups of lodgepole near Trinity Lakes and along Johnson Creek, west of the Sawtooth Primitive Area, Boise National Forest.

Generally there is abundant host material in most infested areas to perpetuate mountain pine beetle. In these same areas there appears to be growing stock in stands which is again becoming susceptible to new outbreaks after being depleted earlier by beetles. This condition prevails on large lodgepole pine acreages within the Sawtooth National Recreation Area presently free of infestation.

DOUGLAS FIR BEETLE, Dendroctonus pseudotsugae Hopk.

Douglas fir beetle infestations have increased over most of the Sawtooth, Boise and Salmon National Forests since 1974. High incidence of tree mortality also occurred in the Idaho Primitive Area on the Payette National Forest; elsewhere on the Forest tree mortality was low. The Challis National Forest showed the lowest incidence although thirty small groups of faders were detected scattered over the Forest which represented a 50 percent increase over 1974.

On the Boise National Forest the number of aerial sketch-mapped groups of Douglas fir beetle fader groups increased about 45 percent over 1974. There were 540 fader groups scattered over the Forest. Largest groups contained in excess of 80 red-topped trees. Douglas fir beetle fader groups were widely scattered over hundreds of square miles within the Boise River drainage from Cottonwood Creek east to Queens River and throughout the entire Mores Creek drainage from Boise Peak to Mores Creek Summit. Most of the prime timber mortality occurred along the upper South Fork of the Payette River, Lowman District, and the Deadwood River drainage. Several active helicopter salvage sales are in progress in these areas. Considerable fader groups were scattered throughout much of the remainder of the Lowman, Emmett, and Cascade Districts.

Douglas fir beetle damage increased slightly on the Salmon National Forest killing merchantable timber in some 307 infestation centers. Largest centers contained over 200 faders. Most Douglas fir beetle activity was concentrated on the west division of the Forest mainly in the Panther Creek drainage including much of Little and Big Deer Creeks, and the Beaver and Clear Creek drainages; Cobalt District. Other infestation centers were scattered throughout Owl Creek, Indian Creek and North Fork of Salmon River drainages; North Fork District. Infestation centers were also concentrated at the north end of the Salmon River mountains between Moose and Comet Creeks. The remaining infestations were widely scattered over the Forest with over half of the damage in inaccessible areas.

Douglas fir beetle fader groups observed on the northern division of the Sawtooth National Forest increased almost three-fold since 1974. The major buildup was in groups of 3-to-10 trees, of which there were 182. In addition there were 68 groups with greater than 10 trees each. Largest groups contained more than 150 trees.

Highest losses of prime timber occurred on the west side of the Forest within the South Fork of the Boise River drainage between Featherville and Carriatown.

On the Payette National Forest more than 200 Douglas fir beetle fader groups were sketch mapped, an increase over 1974 losses. Largest groups numbered 80 or more trees. Heavy concentrations occurred within the Idaho Primitive area primarily within the Whimstick, McCalla, Disappointment and Tag Creek drainages. The remainder of losses occurred on the southern half of the Council District, on Grade, Brownlee, and Pine Creeks. Widely scattered groups of dead Douglas firs were found on the Weiser District. However, no large scale losses were observed.

WESTERN SPRUCE BUDWORM, Choristoneura occidentalis Freeman.

Spruce budworm was the major defoliator in 1975 causing widespread visible damage on nearly 600 thousand acres of Douglas fir, grand fir, subalpine

fir and Engelmann spruce on the Boise, Payette, Salmon and Challis National Forests, an increase of more than 200 thousand acres compared to 1974. The table depicts intensity of defoliation and number of acres defoliated since 1972.

WESTERN SPRUCE BUDWORM
ACRES DAMAGED BY DEFOLIATION CLASS
1972

<u>Forest</u>	<u>Light</u>	<u>Medium</u>	<u>Heavy</u>	<u>Total</u>
Boise	1,600	2,600	0	4,200
Challis	28,900	4,800	0	33,700
Payette	328,400	64,200	7,500	400,100
Salmon	<u>900</u>	<u>0</u>	<u>0</u>	<u>900</u>
	359,800	71,600	7,500	438,900

1973

Boise	3,700	0	0	3,700
Challis	16,400	0	0	16,400
Payette	79,000	76,400	48,000	203,400
Salmon	<u>400</u>	<u>0</u>	<u>0</u>	<u>400</u>
	99,500	76,400	48,000	223,900

1974

Boise	144,400	7,200	0	151,600
Challis		Not Surveyed		
Payette	95,200	102,000	11,600	208,800
Salmon	<u>6,600</u>	<u>0</u>	<u>0</u>	<u>6,600</u>
	246,200	109,200	11,600	367,000

1975

Boise	128,002	2,480	1,990	132,472
Challis	10,620	0	0	10,620
Payette	323,276	63,574	27,090	413,940
Salmon	<u>19,910</u>	<u>0</u>	<u>0</u>	<u>19,910</u>
	481,808	66,054	29,080	576,942

Visible damage is predicted to continue in 1976 through most of the areas defoliated in 1975. Twenty two of twenty six areas sampled for egg masses show defoliation as medium to heavy for 1976. Some of the heaviest damage predicted for 1976 will occur in the following areas: No Business Mountain, Fawn Creek, Willow Creek, Rapid Creek, Paddy Creek and Brundage Mountain, on the Payette National Forest; West Mountain on the Boise National Forest; and Porphyry Creek on the Salmon National Forest. Top-kill of mature trees and mortality of understory are evident in many areas.

WESTERN PINE BEETLE - Dendroctonus brevicornis LeC.

On the Emmett District, Boise National Forest, a western pine beetle outbreak over 4 square miles of heavily overstocked ponderosa pine took a dramatic upturn in 1975. A large commercial thinning sale is in progress to log infested trees before beetle flight. A coordinated salvage sale is proposed for logging infestations outside the sale boundary. Slash disposal techniques include tree length skidding and concentration of slash piles at landings for burning prior to June 30 to prevent Ips buildup.

DOUGLAS FIR TUSSOCK MOTH, Orgyia pseudotsugata (McDunnough).

No visible defoliation by Douglas fir tussock moth was detected during the annual aerial survey. Yard trees on a farm near Rupert, Idaho sustained top damage from a localized infestation that has persisted for several years. Almost all pheromone traps placed throughout southwestern Idaho caught male moths. Impact plots are being maintained on the Sawtooth National Forest and other federal, State of Idaho and private lands to determine short-and long-range effects of heavy defoliation that occurred in 1973.

PINE BUTTERFLY, Neophasia menapia (Felder and Felder)

Several reports were received of conspicuous flights of pine butterfly on the Boise and Idaho City Districts, Boise National Forest. However, no visible defoliation was detected during the annual aerial survey. Elsewhere pine butterfly activity was at a low level.

FIR ENGRAVER BEETLE, Scolytus ventralis LeC.

Fir engraver beetle continued to kill large subalpine firs in disturbed summer home sites around Cascade Reservoir, Boise and Payette National Forests. Widely scattered single- and multiple-tree groups were killed after completion of a logging sale on the New Meadows District, Payette National Forest.

SUGAR PINE TORTRIX, Choristoneura lambertiana (Busck)

Damage to laterals and leaders of young lodgepole pines in a thinned stand was observed on private lands near Donnelly, Idaho. Evaluation is continuing.

DEFOLIATOR SPECIES UNKNOWN.

Approximately twenty-five acres of Douglas fir on BLM lands south of Salmon, Idaho were moderately to heavily defoliated. From the air defoliation appeared to be identical to that caused by tussock moth. Ground evaluations, however, showed damage being caused by an as yet unidentified lepidopteran. The area will be re-examined in 1976. It is hoped that larvae, pupae, or adults will be recovered from which positive identification can be made.